

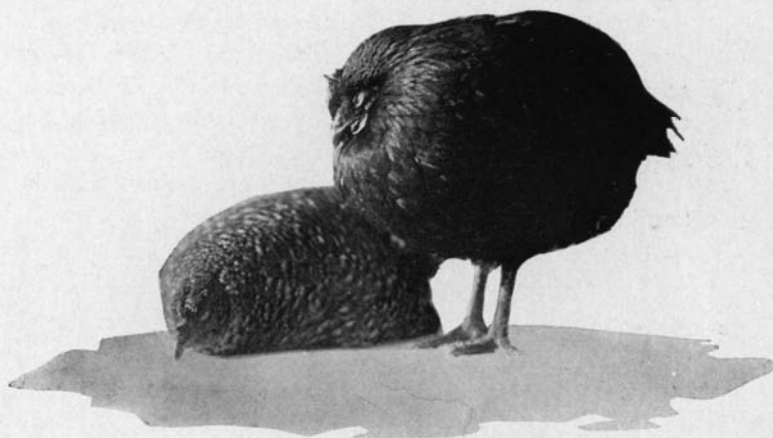


# FOWL CHOLERA

(Hemorrhagic Septicemia of Fowls)

By ROBERT GRAHAM

A Brief Statement of the Cause, Symptoms, Lesions, and Preventive Measures



Chickens with fowl cholera often sit quietly with necks contracted and eyes partly closed

Circular  
441

UNIVERSITY OF ILLINOIS  
COLLEGE OF AGRICULTURE  
Agricultural Experiment Station and  
Extension Service in Agriculture  
and Home Economics

THE LOSSES traceable to fowl cholera have stamped this disease as one of the more important poultry maladies in Illinois. The disease is not seasonal, but may break out in a flock any month of the year.

Examination of sick chickens sent for diagnosis to the Laboratory of Animal Pathology and Hygiene, University of Illinois, during the twelve months preceding June 30, 1935, revealed the presence of cholera in 27 flocks in 16 Illinois counties.

The cases identified in the above way represent only a small part of the actual outbreaks of the disease. Many other typical losses from fowl cholera in infected districts came to the attention of local veterinarians during the year.

Sanitary and quarantine measures are both valuable in keeping down this disease.

# FOWL CHOLERA<sup>1</sup>

By ROBERT GRAHAM, Chief in Animal Pathology  
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**F**OWL CHOLERA, also known as chicken cholera or hemorrhagic septicemia of fowls, is an infectious and usually a sporadic disease, which may affect any species of poultry. In some outbreaks chickens, geese, ducks, and turkeys are affected at the same time, while in other outbreaks the disease apparently does not spread from one species to another. Sometimes on infected premises nearly every chicken dies, while geese on the same farm remain healthy. In other outbreaks the geese may die and the chickens be unaffected.

This disease sometimes appears simultaneously on farms in many different sections of the state; it may be common in a locality or district during certain years and then subside and apparently disappear for an indefinite time. The acute type of the disease may disappear as abruptly as it appeared, but often not until large numbers of birds have died.

## Cause of the Disease

Overcrowded and poorly ventilated houses, cold rains, sudden changes in weather or in rations, together with overfeeding and insanitary surroundings, play an important part in the development of fowl cholera.

The organism causing fowl cholera is a microscopic, rod-shaped bacterium known as *Pasteurella avicida*. One characteristic that helps to identify it under the microscope is that it stains heavier at the ends than in the middle (bipolar staining). In acutely affected fowls, this microorganism may be found in the blood, but in chronic cases it may localize in the liver, joints, lungs, or abdominal cavity. A yellowish, cheesy material, which in the chronic type usually adheres to the lungs, the surface of the liver, or the covering of the intestines, harbors large numbers of the cholera microorganism. Droppings of affected fowls also contain many microorganisms, and may spread infection to healthy chickens by contaminating food and water.

## Symptoms of Acute and Chronic Types

The sudden death of one or more fowls without previous signs of illness is frequently the first noticeable evidence that cholera is present. In cases of acute cholera, fowls which appear healthy and normal may

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<sup>1</sup>This circular is a revision of Circular 286 by the same title.

within 12 to 24 hours afterward be dead in the yard, on the nest, or under the roost. The owner often attributes death to poisoning, and thus neglects to apply measures to prevent the spread of the disease during its first stages, when control measures are most effective.

The *acute* type of fowl cholera is often evidenced by a gasping or choking sound as the bird breathes. This symptom, however, often escapes the owner's attention since it is not generally recognized as a warning of cholera. Chickens that show this symptom may live only

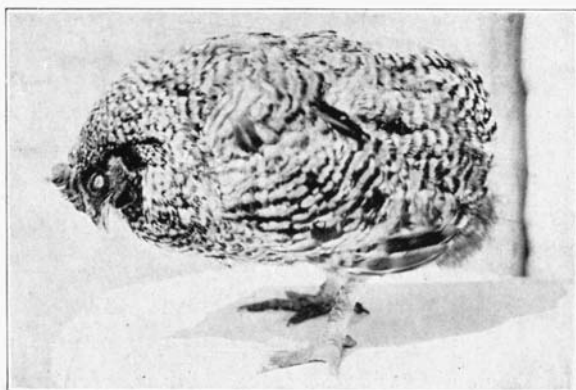


FIG. 1.—FOWLS WITH ACUTE CHOLERA ARE LISTLESS, DROOPY, AND WEAK FOR A FEW HOURS OR SEVERAL DAYS BEFORE THEY DIE

a few hours. Diarrhea is sometimes but not always a symptom. Many affected chickens die before the bowel disturbance develops. The comb and wattles are often purple. Later, in the course of many outbreaks, affected fowls become listless, droopy, and weak for several days before death.

The *chronic* type of fowl cholera remains in the flock for several weeks and usually is accompanied by diarrhea and a marked drop in egg production. In this type the symptoms are obscure and seldom recognized as those of fowl cholera. The chief difference between the chronic and the acute type is that the chronic type kills fewer fowls in a given time. Affected birds that live for several days often sit quietly with necks contracted and eyes partly closed. They develop diarrhea, the appetite is lessened, the feathers are ruffled, and the wings and tails droop. The chronic type of fowl cholera is often confused with fowl typhoid.

Internal laying in pullets is often associated with a low-grade form

of fowl cholera, which may be indirectly traceable to the feeding of a high-protein ration. Some forms of so-called bumblefoot are also recognized as low-grade fowl-cholera infections.

Acute fowl cholera may follow the chronic type in a farm flock and cause sudden and severe losses. *Observant owners who discover the presence of chronic fowl cholera may be able to avoid the development of the acute type by using preventive measures.*

### Diagnosis

In chickens that die suddenly from cholera there often are no gross lesions that indicate the cause of death, but in fowls that have been affected for several days small hemorrhages may be found on the



FIG. 2.—THE ACUTE TYPE OF THE DISEASE KILLS QUICKLY

Chickens that seem healthy may be found dead within a few hours. This is the hen in Fig. 1, two hours later.

heart, lungs, and membranes that support and cover the intestines.

Hemorrhages on the heart or on the covering of the intestines are more pronounced in geese than in chickens, and frequently can be found in geese that die suddenly without showing symptoms of the disease. The abdominal cavity, as well as the sac enclosing the heart, may occasionally contain a small amount of clear liquid in which small yellow flakes of fibrin are found.

In chickens that have shown symptoms of the disease for several days the lungs may be dark red in color. The liver may be enlarged and soft and occasionally covered with small white spots. A thin, yellowish film also is often found on the liver and the covering of the intestines.

In the chronic form of cholera a dry, yellowish deposit may be

found adhering to the gizzard, the intestines, or the wall of the abdominal cavity. Chickens that cannot walk for several days before they die often show dry, yellowish areas in the connective tissue and muscle in the region of the breast bone.

While the above-described changes in the internal organs indicate fowl cholera, it often is necessary to find the fowl-cholera organism in the blood or the internal organs before a positive diagnosis can be made. The Laboratory of Animal Pathology and Hygiene, University

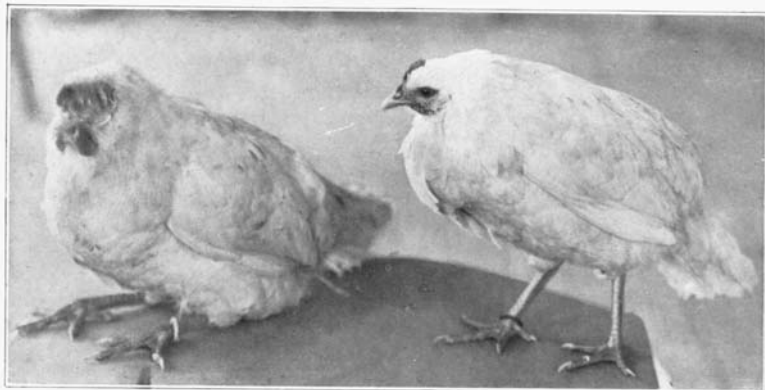


FIG. 3.—CHICKENS WITH THE CHRONIC TYPE OF CHOLERA

When affected with the chronic type of fowl cholera, chickens lose their appetites and develop diarrhea, their feathers are ruffled and their wings and tail feathers droop.

of Illinois, in cooperation with the State Department of Agriculture, is prepared to aid veterinarians and farmers in a limited way in establishing a correct diagnosis. Since fowl cholera may be confused with fowl typhoid or other diseases with similar symptoms, a laboratory examination of doubtful cases is important.

### Prevention by Sanitation

Sanitary yards and clean, properly ventilated poultry houses, together with wholesome, properly balanced rations, help to prevent outbreaks of fowl cholera. Improperly drained yards should be avoided. Self-feeders and sanitary drinking containers should be provided in order to prevent pollution of feed and water.

Frequent cleaning of dirt and litter from the houses, followed by proper disinfection, should be carried out in a systematic way. Hot lye water (*one pound of lye to 20 gallons of water*) applied with a

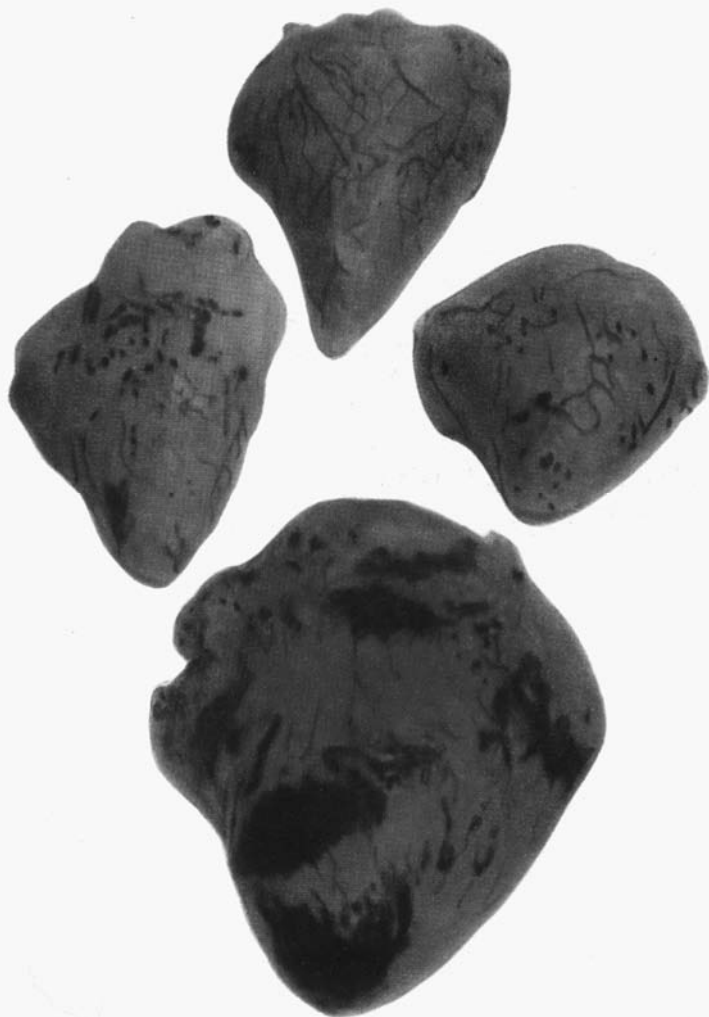


FIG. 4.—HEMORRHAGES AND RED SPOTS MAY BE FOUND ON THE  
HEARTS OF CHICKENS THAT DIE OF CHOLERA

broom will aid in cleaning houses. Either a 3-percent compound cresol solution (U.S.P.) or whitewash containing 3-percent carbolic acid, applied with a spray pump, is a reliable disinfectant. The lye solution should be allowed to dry 24 to 48 hours before the disinfectant is used.

### **Prevention by Quarantine**

All newly purchased stock, as well as fowls exhibited at shows, should be kept apart from the rest of the flock for three weeks after their return to the premises. Uncooked garbage containing poultry offal should not be fed to chickens.

In localities where fowl cholera is prevalent, owners should not overlook the part that sparrows, pigeons, buzzards, dogs, and visitors, as well as the actual intermingling of fowls on adjoining premises, play in carrying the infection from farm to farm. Every possible precaution should be taken to guard against transmission of the disease by these agencies when the disease exists in a community.

Altho it has been suggested that there is danger of introducing fowl cholera thru the purchase of hatching eggs from flocks chronically infected with the disease, no evidence has been obtained to show that cholera is communicated in this way.

### **Checking the Disease Within a Flock**

The spread of fowl cholera within a flock may be checked by isolating all sick chickens and burning the dead ones. The healthy chickens should be taken from the yard or premises where the disease exists and divided into as many groups as possible. The infected yard should be plowed and not used for poultry for three to six months.

Attention should be given to the rations of the birds as well as to the cleaning and disinfecting of their houses. On the appearance of the disease, the amount of grain fed should be reduced and supplanted with bran fed as a wet mash.

### **Vaccines and Medicines Not Dependable**

Little dependence can be placed upon the curative or preventive value of medicines or vaccines in checking fowl cholera. Altho produced commercially under government license, bacterins for the treatment of this disease belong to a group of biologic products the immunizing value of which has not yet been definitely established.

Valuable information and assistance can often be obtained from local veterinarians in controlling infective diseases of this character.